AGENDA ITEM D-7

CITY OF LODI
COUNCIL COMMUNICATION

AGENDA TITLE: Adopt Resolution Authorizing Additional Task Order with West Yost Associates for Fiscal Year 2009/10 to Provide Permit Assistance and Prepare Various Studies Required by the City's Wastewater Discharge Permit ($392,300) and Appropriating Funds ($435,000)

MEETING DATE: November 4, 2009

PREPARED BY: Public Works Director

RECOMMENDED ACTION: Adopt a resolution authorizing an additional task order in the amount of $392,300 with West Yost Associates for Fiscal Year 2009/10 to provide permit assistance and prepare various studies required by the City's wastewater discharge permit and appropriating $435,000 as shown below.

BACKGROUND INFORMATION: The City's wastewater discharge permit, issued by the State Central Valley Regional Water Quality Control Board (Board), includes requirements for a number of studies to be conducted and plans or reports to be developed on various aspects of the City's wastewater treatment operations. On August 20, 2008, Council authorized West Yost Associates (WYA) to proceed with preparation of work plans for various studies required by the permit. The work reflected in the attached proposal (Exhibit A) includes studies and reports required by the Board, along with assistance in meeting permit compliance requirements.

WYA has furnished the City with a combined proposal to respond to the permit requirements scheduled for FY 2009/10, including assisting City staff in regulatory program management.

The following includes a brief description of the permit-required tasks for this fiscal year; a more detailed description is included in the attached proposal.

Task 1: Project Management – This task includes project management-related activities, including general project coordination ($20,000).

Task 2: State Board Petition Support – This task provides support to the City in negotiating the appropriate permit modifications with the Regional Board under the Regulatory Program Management Task (Task 4). This task is complete and will not require additional scope or budget (now or in the future) ($0).

Task 3: San Joaquin Valley Air Pollution Control District Biosolids Rule Compliance – This task provides assistance in obtaining a variance to Biosolids Operations Rule 4565 ($10,700).

APPROVED: _____
Blair King, City Manager

Task 4: Regulatory Program Management – This task includes meetings and coordination efforts with the Board regarding permitting issues. This task also involves guidance related to new regulatory requirements associated with the current permit ($30,800).

Task 5: Land Application Monitoring Coordination – This task includes coordinating development of the City's monthly land application reports and the costs associated with the permit-required agronomist's review and certification ($26,200).

Task 6: Compliance Studies – This task includes efforts needed to complete the Board-required Corrective Action/Method of Compliance Work Plan, Pollution Prevention Plan and Treatment Feasibility Study. These studies are required of all dischargers that receive permit compliance schedules for new effluent limitations ($20,300).

Task 7: Toxicity Reduction Evaluation (TRE) – Though not expected, this task is to respond to a Board-required TRE in the event of a toxicity exceedence. TRE's are very time sensitive and require an intricate series of steps that are dependent on the outcome of initial findings (If a TRE is not needed, the budget for this item will not be expended.) ($94,100).

Task 8: Title 22 Engineering Report – This task includes completion of a Title 22 Engineering Report due November 2009 to the Regional Board and the Department of Public Health. Title 22 Reports are required for all treatment plants that supply recycled water for other than agricultural purposes ($48,500).

Task 9: Wintertime Irrigation Management Plan – Since approximately one-half of the City's land application areas are located within the 100-year flood plain of the Delta, this plan is required to minimize potential for winter flooding events to washout biosolids from the land application areas to the Delta. This plan was completed in December 2008. There are no direct actions needed to document implementation. This task is complete and will not require additional scope or budget ($0).

Task 10: Temperature Study – This task includes implementation of the Temperature Study Work Plan approved June 2008. The purpose of this permit-required study is to establish receiving water temperature limitations that are protective of the beneficial uses (specifically aquatic life uses) identified for the receiving water (Dredger Cut). This study was initiated in July 2008, and a final report is due October 2010 ($37,500).

Task 11: Industrial Influent Characterization Study – This task includes implementation of the Industrial Characterization Work Plan approved June 2008. This permit-required study is intended to characterize the wastewater influent collected by the industrial sewer system over a two-year period through quarterly influent monitoring. The data collected will be reviewed. The primary costs associated with this study will be laboratory related ($3,400).

Task 12: Pond Freeboard Evaluation Study – This permit-required study is intended to evaluate the stability of the storage pond berms and to identify if a need exists to implement mitigation or control measures that may be necessary to prevent undesirable risks associated with berm failure or overtopping. This study work plan was approved by the Regional Board in July 2009 ($40,000).

Task 13: Salinity Evaluation and Minimization Plan – This task includes implementation of the Salinity Evaluation and Minimization Plan that is required of all municipal dischargers of one million gallons per

day or more in the Central Valley and is intended to identify sources of salinity in the City's domestic and industrial effluent ($4,600).

Task 14: Background Groundwater Quality and Degradation Assessment Study – This permit-required study will be implemented in accordance with the Background Monitoring Well Work Plan approved June 2008 and is intended to establish local background groundwater conditions in an effort to quantify the threat to groundwater quality associated with the City's land application practices ($49,500).

Task 15: Effluent Characterization Study – This task involves the completion of the Characterization Study Work Plan ($6,700).

The estimated cost for this work is $392,300. Staff suggests a contingency amount of approximately 10 percent to account for unforeseen issues, for a total appropriation of $435,000.

FISCAL IMPACT: The studies' monitoring efforts are required in the City's permit and nonperformance would subject the City to significant fines. The costs associated with this work have been anticipated in the City's Wastewater funding requirements.

FUNDING AVAILABLE: Requested Appropriation:

Wastewater Operating Fund (170403)	$290,310
Wastewater Capital Fund (172028)	$144,690
Total	$435,000

Ruby Laurie
for Jordan Ayers
Deputy City Manager/Internal Services Director

F. Wally Sandelin
Public Works Director

FWS/CS/dsg

Attachment

Exhibit A

WEST YOST ASSOCIATES
Consulting Engineers

October 2, 2009

Mr. Charles E. Swimley, Jr.
Water Services Manager
City of Lodi
1331 South Ham Lane
Lodi CA 95242

SUBJECT: Proposal for Engineering Services—NPDES Permit Assistance for Fiscal Year 2009/2010

Dear Mr. Swimley:

West Yost Associates (WYA) appreciates the opportunity to present to you this letter proposal for engineering services related to ongoing assistance to the City of Lodi (City) in meeting the NPDES permit requirements for the Lodi Water Pollution Control Facility (WPCF).

The Regional Water Quality Control Board (Regional Board) adopted the final NPDES permit and associated Time Schedule Order (TSO) for the City's WPCF on September 14, 2007. The scope of work presented in this proposal includes the development of the NPDES permitting submittals that are anticipated beginning in September 2009 and continuing through the end of the July 2010 (hereinafter referred to as Fiscal Year 2009/2010, or FY 09/10).

Note that this proposal assumes that the City staff will complete all of the necessary monitoring needed to achieve the objectives of the tasks outlined in the Scope of Work, and that the City will contract directly with a certified laboratory for the completion of any necessary analytical efforts. Under the Regulatory Program Management task, WYA will provide support for coordinating these efforts with other regulatory needs.

SCOPE OF WORK

The following scope of work defines the detailed engineering service tasks related to ongoing assistance to the City in meeting the NPDES permit compliance requirements for the Lodi WPCF. These tasks include the following:

- Task 1: Project Management
- Task 2: State Board Petition Support
- Task 3: SJVAPCD Biosolids Rule Compliance
- Task 4: Regulatory Program Management
- Task 5: Land Application Monitoring Coordination

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- Task 6: Compliance Studies (Method of Compliance Work Plan, Pollution Prevention Plan and Treatment Feasibility Study)
- Task 7: Toxicity Reduction Evaluation
- Task **8:** Title 22 Report
- Task 9: Wintertime Irrigation Management Plan
- Task 10: Temperature Study
- Task 11: Industrial Influent Characterization Study
- Task 12: Pond Freeboard Study
- Task 13: Salinity Evaluation and Minimization Plan
- Task 14: Groundwater Background Analysis
- Task 15: Effluent and Receiving Water Characterization Study

Task 1. Project Management

Task 1 includes project management-related activities including general project coordination. In addition, to ensure continued achievement of consistently high quality work products, and in accordance with the WYA Quality Assurance/Quality Control (QA/QC) policy, a WYA staff member at the Principal Engineer level or higher will review significant work products. Under this task, brief descriptions of services performed will be included on monthly invoices.

The efforts needed during FY 09/10 under this task can only be estimated at this time, and the associated fee estimate presented in this letter proposal is based on WYA's knowledge of the City's current permitting concerns. If the proposed budget is not expended in the timeframe anticipated for this scope of services, it can be directed toward the completion of other efforts.

Task 2. State Board Petition Support

The State Water Resources Control Board (SWRCB) recently adopted an Order that remanded the City's permit back to the Regional Board for reconsideration of the Title 27 exemption applicable to the WPCF storage ponds and land application area. WYA will provide support to the City in negotiating the appropriate permit modifications with the Regional Board under the Regulatory Program Management Task (Task 4). Therefore, this task is complete and will not require additional scope or budget (now or in the future).

Tasks 3. SJVAPCD Biosolids Rule Compliance

In March 2007, the San Joaquin Valley Air Pollution Control District (SJVAPCD) adopted Biosolids Operation Rule 4565. This rule requires that the City implement additional controls for Volatile Organic Carbon (VOC) emissions from the City's biosolids land application practices. The City will not be able to comply with the SJVAPCD Biosolids Operation Rule. Therefore, the City will need to work with SJVAPCD staff to identify a compliance strategy and timeline that can be incorporated into a temporary variance.

The purpose of this task to provide assistance to the City, in obtaining a variance to Biosolids Operation Rule 4565. Additional efforts are assumed to not be needed at this time. The actual level of effort is uncertain. Therefore, a nominal fee has been assumed for this task. All work will be performed on a time and material basis. Monthly invoices will detail the efforts and costs. However, depending on the level of effort required, a scope and budget amendment may be necessary in the future.

Deliveruble: SJVAPCD Variance Request Document.

Task 4. Regulatory Program Management

WYA anticipates that the City will continue to require ongoing assistance related to understanding general regulatory compliance issues and implementing the measures needed to achieve compliance. It is difficult to predict the level of effort needed for this task. Assistance under this task is anticipated to include one or more of the following items:

1. Working with City staff to understand the permit compliance requirements;
2. Maintaining and updating the attached implementation schedule for the compliance measures;
3. Developing presentations for City staff, Council, and/or other consultants outlining the regulatory compliance concerns;
4. Providing support to the City and the Regional Board in developing permit revisions in response to the recent SWRCB permit remand, modifying the land application organic loading limit in accordance with the recently completed Organic Loading Study, and modifying the effluent temperature requirements in accordance with the Temperature Study that is almost complete;
5. Reviewing permits and other regulatory guidance documents issued by the Regional Board and SWRCB that would be applicable to the WPCF;
6. Providing assistance to the City, as needed, for developing responses to Regional Board requests;
7. Providing assistance in developing semi-annual permit compliance progress reports (Due February 1, 2010 and August 1, 2010);
8. Coordinating efforts between all the studies and other planning-related issues;
9. Helping the City to develop monitoring programs;
10. Completing analyses of regularly collected monitoring data to identify potential future regulatory concerns;
11. Providing support to the City and the PCP Cannery in addressing food processing waste disposal issues; and/or
12. Attending and preparing for meetings to discuss the results of such activities outlined above.

The specific work efforts and deliverables under this task cannot reasonably be determined at this time, and the associated fee estimate presented in this letter proposal is based on WYA's knowledge of the City's current permitting concerns. All work will be performed on a time and material basis, and monthly invoices will detail the efforts and costs. Depending on the level of effort required, a scope and budget amendment may be necessary in the future. If the estimated fee is not expended in the timeframe anticipated for this scope of services, it may be directed toward the completion of other efforts. These tasks may also require support from our legal subconsultant, Somach, Simmons and Dunn (SSD), and a small budget has also been assumed for these efforts.

It will be critical that the City's regulatory compliance efforts are completed in coordination with Regional Board staff and other regulatory authorities. It is imperative that these agencies are in agreement with the study approach and the type and amount of information to be obtained from any given study. Therefore, this task also involves the participation of WYA staff and our subconsultants, as needed, in meetings with the appropriate regulatory agency staff. Meetings that may be required are as follows:

- September 2009: meeting with Regional Board staff to discuss the results of the Year 1 Pollution Prevention Plan and Industrial Influent Characterization Study monitoring;
- December 2009/January 2010: meeting with Regional Board staff to discuss the permit revisions needed in response to the SWRCB remand, to modify the land application organic loading limit in accordance with the recently completed Organic Loading Study; and to modify the effluent temperature requirements in accordance with the Temperature Study that is almost complete;
- December 2009/January 2010: meeting with Regional Board and Department of Public Health (DPH) staffs (likely separate meetings) to discuss the draft Title 22 Engineering Report;
- April 2010: meeting with Regional Board to discuss the Verification of Permit Compliance/Request for Flow Increase.

Other coordination meetings are also anticipated to be required.

Deliverable: Meeting Agenda and notes for up to five meetings with the City, the Regional Board and/or other regulatory authorities regarding the acceptability of the proposed Work Plans and other regulatory matters.

Administrative Draft February 2010 Semi-Annual Progress Report (Industrial Influent Characterization Study, Background Groundwater Quality and Degradation Assessment) for City Review. Final February 2010 Semi-Annual Progress Report for Regional Board Consideration.

Administrative Draft August 2010 Semi-Annual Progress Report (Pollution Prevention Plan, Corrective Action Plan) for City Review. Final August 2010 Semi-Annual Progress Report for Regional Board Consideration.

The administrative draft reports will be distributed in PDF format for review. Up to six (6) Bound copies of the revised version of the reports will be distributed to the Regional Board and City staff.

Task 5. Land Application Monitoring Coordination

This task involves providing the following items:

- Review the 2009 land application monitoring data and help with development of the required 2009 Annual Cropping and Irrigation Report and the 2009 Annual Biosolids Application Report;
- Review of the monthly land application reports;
- Coordination with City staff and tenant farmers regarding collection of required monitoring data during the 2010 irrigation season.

Deliverables: Administrative Draft 2009 Annual Land Management Report and 2009 Annual Biosolids Application Report. Final 2009 Annual Land Management Report and 2009 Annual Biosolids Application Report.

The administrative draft reports will be distributed in PDF format for review. Up to six (6) Bound copies of the revised version of the reports will be distributed to the Regional Board and City staff.

Task 6. Compliance Studies

The following compliance studies are required under the new NPDES permit:

- Corrective Action Plan/Method of Compliance Work Plan
- Pollution Prevention Plan
- Treatment Feasibility Study

This task includes the efforts that will need to be completed for these studies during FY 09/10.

Subtask 6.1. Corrective Action Plan/Method of Compliance Work Plan

WYA completed the Method of Compliance Work Plan (MOC Work Plan) in April 2008. Approval of the MOC Work Plan was provided by the Regional Board in a letter dated June 26,2008. Implementation of the Work Plan requires support that will be provided under the Regulatory Program Management Task (Task 4), including the submittal of an Annual Progress Report on August 1, 2010, which will detail the progress that has been made toward achieving compliance. Therefore, this subtask is complete is will not require additional scope or budget (now or in the future).

Subtask 6.2. Pollution Prevention Plan

WYA completed the Pollution Prevention Plan Work Plan (PPP Work Plan) on behalf of the City in April 2008. Per Regional Board request, an addendum to the PPP Work Plan and an Initial Manganese PPP Study was submitted in August 2008. Approvals of these documents were provided by the Regional Board in a letter dated September 9, 2008. In accordance with the City's permit, a final PPP report is due to the Regional Board two years following approval of the Work Plan, which is September 2010.

In the recently submitted August 2009 Progress Report, WYA provided recommendations for additional PPP monitoring efforts that should be completed during Phase II (FY 09/10). The sampling locations, parameters and frequencies are detailed in that document. WYA anticipates that the City staff will complete all of the sample collection efforts required under the PPP Work Plan during FY 09/10. WYA also assumes that the City will contract directly with the analytical laboratory for the sample analysis.

WYA efforts during the PPP implementation Phase II (FY 09/10) will include review of the data collected during FY 09/10 under the PPP Work Plan and completion of the PPP Report. WYA completed a review of the PPP data collected during FY 08/09 under a previous project. Based on this analysis, there are limited PPP options available to the City. Therefore, the estimated budget for this task is based on the assumption that completion of the PPP report will not require a detailed analysis of potential pollution prevention activities. Additional discussion with Regional Board staff regarding the PPP efforts to date (planned for September 2009) could result in a modification to the proposed scope and budget.

An administrative draft PPP Report will be issued to the City for review and revision prior to submission of a draft report to the Regional Board staff for review. Following Regional Board review and comment, a final PPP Report will be developed (if needed).

> *Deliverables: Administrative Draft PPP Report for* City *Review; Draft PPP Report for Regional Board staff review; and a Final PPP Report. The administrative draft report will be distributed in PDF format for review. Up to six (6) bound copies of the revised version of the report will be distributed to the Regional Board and* City *staff.*

Task **6.3** Treatment Feasibility Study

WYA completed the Treatment Feasibility Study Work Plan (TFS Work Plan) on behalf of the City in October 2008. Approval of the TFS Work Plan was provided by the Regional Board in a letter dated July 13, 2009. The NPDES permit provides the City with a two year timeline to complete the TFS Report from when the TFS Work Plan is approved by the Executive Officer. Therefore, this report is not due until July 2011.

The TFS Work Plan describes the efforts that will be completed by the City to examine the feasibility, costs and benefits of different treatment options that may be required to remove aluminum, ammonia, chlorodibromomethane, and dichlorobromomethane from the discharge. Specifically, the TFS Work Plan stated that the City will rely on data that are collected under the permitted Monitoring and Reporting program to verify that the compliance objectives have been

met following the completion of the recent WPCF upgrade project. Note that this monitoring will also be used to support the City's request for a flow increase to 8.5 million gallons per day.

Implementation of the Work Plan requires support that will be provided under the Regulatory Program Management Task (Task 4), including the submittal of an Annual Progress Report on August 1, 2010, which will detail the progress that has been made toward achieving compliance. Additional efforts under this subtask will not be needed during FY 09/10.

Task 7. Toxicity Reduction Evaluation

Roberson-Bryan Inc (RBI), in association with WYA, completed the Toxicity Reduction Evaluation Work Plan (TRE Work Plan) in January 2008. Approval of the TRE Work Plan was provided by the Regional Board in a letter dated June 26,2008. Implementation of the TRE Work Plan will only be required should the WPCF exceed the TRE trigger outlined in the NPDES permit. This requirement is applies to all NPDES dischargers. As detailed in the TRE Work Plan, the major items that may need to be included under a TRE are as follows:

- Whole Effluent Toxicity Testing Bioassay Evaluation;
- Information and Data Acquisition;
- Facility Operations and Performance Evaluation;
- Preparation of a Final TRE Action Plan;
- Toxicity Identification Evaluation (TIEs);
- Toxicity Source Evaluation and Control; and/or
- Preparation of a TRE Report.

The efforts needed during FY 09/10 are based on the assumption that the City will need to implement a Toxicity Reduction Evaluation (TRE) as presented in the TRE Work Plan. However, if the City's monitoring does not demonstrate toxicity in the WPCF effluent, a TRE will not be necessary. If the fee outlined in this letter proposal is not expended in the timeframe anticipated for this scope of services, the budget can be directed toward the completion of future efforts at the City's direction. On the other hand, the amount of services needed to complete a TRE cannot be accurately predicted at this time because the amount of effort needed for key steps in the process, and even the sequential steps in the process itself, are largely dictated by the outcome of the bioassays and the Toxicity Identification Evaluations (TIEs). The TIE may or may not initially be effective in identifying the constituent causing the toxicity that then needs to be controlled and initial TIE success can have a significant impact on costs. These outcomes cannot be known at this time. The amount of services needed for facility operations and performance evaluation is also dependent upon the amount of this task completed by City, which will likely be dependant on the timing and frequency of the toxicity exceedances. Therefore, the scope of work for this task is limited to the budget allocated in this letter proposal. In the event that a TRE requires services beyond that scoped and budgeted herein, WYA would, upon request, submit a separate proposal for additional services. The budget also assumes that the City will contract directly with the bioassay laboratory for all TRE bioassay and TIE analytical work.

In addition, because TREs are an intricate series of steps and assessments over time, with the exact nature of activities in latter tasks largely dictated by the outcome and findings in the initial tasks, the proper and efficient conducting of a TRE requires extensive technical oversight, coordination, and direction. Therefore, this task provides budget for such services as well as miscellaneous services provided during the TRE process not specifically covered under other the specific TRE items listed above.

Given their expertise, RBI would serve as the technical lead for this work. However, WYA will provide support and coordination in completing these efforts. Coordination meetings required in FY 09/10 in support of completing this task will be covered under the Regulatory Program Management Task (Task 4) described above.

Task 8. Title 22 Engineering Report

WYA completed the Title 22 Engineering Report Work Plan (Title 22 Work Plan) in April 2008. Approval of the Title 22 Work Plan was provided by the Regional Board in a letter dated June 18,2008. The draft Title 22 Engineering Report is due to the Regional Board and DPH by November 3,2009; and a final report is due within six **(6)** months of "approval" of the draft report.

The implementation phase of the Title 22 Work Plan was completed under the scope of work approved for FY 08/09 and included the following items:

- UV System Validation
- Review of Northern California Power Authority (NCPA) Facilities
- Coordination with DPH

WYA efforts during FY 09/10 will include completion of a Title 22 Engineering Report that satisfies the DPH requirements. An administrative Draft Title 22 Engineering Report will be issued to the City for review and revision prior to submission to the DPH and the Regional Board for review. Following DPH and Regional Board review and comment, a final Title 22 Engineering Report will be developed (if needed) and submitted to the Regional Board for inclusion in the City's permit record. Regional Board and DPH coordination meetings required over the next twelve months in support of completing this task will be covered under the Regulatory Program Management Task (Task 4) described above.

Deliverables: Administrative Draft Title 22 Engineering Report for City Review; Draft Title 22 Engineering Report for DPH and Regional Board staff review; and a Final Title 22 Engineering Report. The administrative draft report will be distributed in PDF formatfor review. Up to eight (8) bound copies of the revised version of the report will be distributed to the Regional Board, DPH, and City staff.

Task 9. Wintertime Irrigation Management Plan

WYA completed the Wintertime Irrigation Management Plan in December 2008. This document described the actions that will be taken by the City to minimize potential water quality impacts during flooding events that would cause washout of wastewater or biosolids from the land application area. There are no direct actions needed to document implementation of the Wintertime Irrigation Management Plan. Therefore, this task is complete is will not require additional scope or budget (now or in the future).

Task 10. Temperature Study

RBI, in association with WYA, completed the Temperature Study Work Plan for the White Slough WPCF Effluent and Downstream Water Bodies (Temperature Study Work Plan) in April 2008. Approval of the Temperature Study Work Plan was provided by the Regional Board in a letter dated June 26,2008. The Temperature study was initiated on July 22, 2008. In accordance with the WDRs, the Temperature Study must be complete within two years of initiation, and a final study report is due within 90 days of completion of the study. Therefore, a final report is due no later than October 20, 2010. However, barring the determination that additional data collection is needed, it is anticipated that the Temperature Study report will be completed during FY 09/10.

The following specific services under this task will be provided during FY 09/10:

- Development and evaluation of appropriate numeric temperature limitations
- Preparation of a report summarizing the results of the study and the recommended limitations.

Given their expertise in this area, RBI will continue to serve as the technical lead for this work. WYA will provide support and coordination efforts during the completion of this study.

An administrative Draft Temperature Study Report will be issued to the City for review and revision prior to submission to the Regional Board staff for review. Following Regional Board review and comment, a final Temperature Study Report will be developed (if needed).

In addition, WYA/RBI will also participate in up to two (2) meetings with the City and/or Regional Board staff to discuss the recommendations provided in the Temperature Study Report. The City must also submit a Progress Report on February 1, 2009 detailing the status of the Temperature Study. Assistance will be provided by the WYA/RBI team for these efforts under the Regulatory Program Management Task (Task 4).

Deliverables: Administrative Draft Temperature Study Report for City Review; Draft Temperature Study Report for Regional Board staff review; and a Final Temperature Study Report. The udministrative draft report will be distributed in PDF formats for review. Up to six (6) bound copies of the revised version of the report will be distributed to the Regional Board and City staff.

Task 11. Industrial Influent Characterization Study

WYA completed the Industrial Influent Characterization Study Work Plan (Industrial Characterization Work Plan) in April 2008. Approval of the Industrial Characterization Work Plan was provided by the Regional Board in a letter dated June 26,2008. In accordance with the City's NPDES permit, the Industrial Characterization will occur over a two-year period, and a final report is due no more than 90 days following completion of the study. The study began in August 2008 and will end in August 2010, with the final report due November 2010.

In the recently submitted August 2009 Progress Report, WYA provided recommendations for monitoring efforts that should be completed during FY 09/10. The sampling locations, parameters and frequencies are detailed in that document. WYA anticipates that the City staff will complete all of the sample collection efforts during FY 09/10. WYA also assumes that the City will contract directly with the analytical laboratory for the sample analysis.

The scope of work for WYA efforts during FY 09/10 includes review of the data collected (it is anticipated that such data will be provided to WYA as it becomes available from the laboratory). The City will also need to submit a Progress Report on February 1, 2009, for which assistance will be provided under the Regulatory Program Management Task (Task 4). Additional efforts under this task will not be needed during FY 09/10.

Task 12. Pond Freeboard Evaluation Study

Wallace-Kuhl & Associates (WKA), in association with WYA, completed the City of Lodi Pond Study Geotechnical Engineering Work Plan and Implementation Schedule (Pond Study Work Plan) in October 2008. Approval of the Pond Study Work Plan was provided by the Regional Board in a letter dated July 13,2009. In accordance with the City's NPDES permit, the Pond Freeboard Evaluation will occur over a two-year period, and a final report is due no more than 90 days following completion of the study. The study is planned to begin in September 2009 and the majority of data collection efforts will be completed over a several week period at this time. Continued monitoring of groundwater levels near the ponds will occur over an **18** month period following the completion of the initial field efforts. This schedule will ensure the study ends no later than September 2011.

The scope of work for WYA/WKA team during FY 09/10 includes the field exploration and laboratory analytical components of the Pond Study Work Plan. Given their expertise in this area, WKA will serve as the technical lead for the completion of these efforts. WYA will provide support and coordination efforts. These efforts are further described below.

Prior to the planned subsurface field exploration, WKA will perform the following tasks:

1. Obtain a permit from San Joaquin County Environmental Health to perform subsurface exploration at the site.
2. Review available geologic and groundwater information for the site, as well as available design and construction documents for the existing pond berms.

3. Mark the boring locations with white paint and wood lathe and notify the Underground Service Alert (USA) to obtain utility clearance, as well as coordinate with City of Lodi personnel to locate facilities not marked by **USA.**

The subsurface exploration will include: advancing ten (10) soil probes throughout the existing pond berms; installing ten (10) groundwater monitoring wells at the soil probe locations; drilling and sampling of thirty-one (31) borings; and one day of hand auger sampling. For purposes of the budget presented in this proposal, the exploration efforts are assumed to be as follows:

1. The ten (10) soil probes will be advanced within, and/or adjacent to, the existing pond berms. The soil probes will extend about twenty (20) feet below the existing top of the berms using a truck-mounted hydraulic push Geoprobe® device. The Geoprobe® will recover continuous samples at the soil probe locations using 1-inch diameter, 4-foot long acetate-lined piston samplers. The liners will be sealed in the field and returned to the laboratory for further examination and testing.
2. The ten (10) groundwater monitoring wells will be constructed at the soil probe locations. The wells will be monitored periodically by City of Lodi representatives and reported to us. The groundwater monitoring at the wells will be used to evaluate the affect of pond levels on the groundwater levels (if any).
3. The 31 borings will be drilled and sampled at the approximate locations indicated in the Pond Study Work Plan utilizing a truck-mounted drill rig. Twenty (20) borings will be performed on top of the existing pond berms and will extend about twenty-five (25) feet below the existing ground surface and eleven (11) borings will be performed on the landside toe of the berms and will extend about fifteen (15) feet below the existing ground surface. Additional assumptions are as follows:

    a. The boreholes will be backfilled with neat cement grout to the surface in accordance with San Joaquin County Environmental Health requirements. Borings performed in existing pavement areas (at the top of the berm) will be patched with asphalt concrete cold-patch. Spoils from the drilling will be disposed of on-site.

    b. Immediately after recovery, the field engineer will visually classify the soils in the tubes and the ends of the tubes will be sealed to preserve the natural moisture content. **All** samples will be taken to the laboratory for additional classification and selection of samples for testing.

4. The hand auger probes will be completed over a one day period at the waterside toe of the berms when pond levels allow. The hand auger probes will each extend up to about ten (10) feet below the existing ground surface. Soil samples will be collected from the auger cuttings at selected intervals to obtain samples representative of the observed soil profile. Soil samples collected from the hand auger probes will be sealed in bags in the field and returned to the laboratory.

Laboratory testing will be performed on the recovered soil samples including the following:

1. Permeability testing;

2. Strength testing (unconfined compressive strength testing and/or triaxial tests depending on the soils conditions encountered);
3. In-place soil moisture contents; and
4. Dry densities.

Task 13. Salinity Evaluation and Minimization Plan

The Salinity Evaluation and Minimization Plan was submitted to the Regional Board on October 30, 2008. The Regional Board Executive Officer approved this Plan on September 29,2009. The City must provide annual reports (due on August 1) demonstrating reasonable progress in the reduction of salinity in its discharge to Dredger Cut and the Agricultural Fields. WYA efforts under this task will be to develop the salinity data documentation that will need to be included in the August 2010 Annual Progress Report (completed under the Regulatory Program Management Task).

Deliverables: Documentation of the City's 2009/2010 Salinity Evaluation and Minimization activities for inclusion in the August 2010 Semi-Annual Progress Report. August 2010 Semi-Annual Progress Report will be provided under Task 4.

Task 14. Background Groundwater Quality and Degradation Assessment Study

WYA completed the revised Background Monitoring Well Installation Work Plan (Monitoring Well Work Plan) in May 2008. The Regional Board approved this Work Plan on June 4, 2008. In accordance with the Monitoring Well Work Plan, three "background" monitoring wells were installed in December 2008. In accordance with the WDRs, a Background Groundwater Quality Characterization Report is due by August 1,2010, and should include at least two years of groundwater monitoring in the monitoring wells network, including the background monitoring wells.

Samples are collected and analyzed from the City's monitoring wells on a quarterly basis in accordance with the Monitoring and Reporting Program included in the City's permit. WYA anticipates that the City staff will complete all of the sample collection efforts required during FY 09/10. WYA also assumes that the City will contract directly with the analytical laboratory for the sample analysis.

WYA efforts during FY 09/10 will include the following tasks:

- Subtask 14.1 Perform Background Groundwater Quality Comparison
- Subtask 14.2 Prepare Background Groundwater Quality Characterization Report
- Subtask 14.3 Construct Monitoring Wells (Optional)
- Subtask 14.4 Groundwater Modeling (Optional)

Subtasks 14.1 and 14.2 are intended to address the specific requirements of the permit.

The optional Subtask 14.3 is included in the event that additional monitoring wells are needed to completely characterize background groundwater quality or to assess groundwater quality downgradient of "every treatment, storage, and representative agricultural field that does or may release waste constituents to groundwater."

The optional Subtask 14.4 is included in the event that the City wishes to use groundwater modeling to help delineate the lateral extent of potential impacts to shallow groundwater from both the WPCF and the other non-point sources in the vicinity (such as the dairies and their associated land application areas located to the north and northeast of the WPCF). Specifically, a groundwater model would be used to identify the three-dimensional flow paths in the vicinity of the WPCF and diaries. This would provide helpful information regarding the likely sources that may be impacting wells within the existing monitoring network and guide interpretation of groundwater quality monitoring results. Additional details regarding the need for groundwater modeling is provided below.

Regionally, groundwater flow converges along flow paths extending from recharge areas towards a regional pumping center in the Stockton area. The primary recharge areas of interest are the Delta, the lower Mokelumne River and lands in the Woodbridge Irrigation District (WID). Recharge in the Delta results from seepage from Delta channels and from deep percolation of water pumped from Delta channels and used to irrigate delta lands. Recharge within WID results from canal seepage and deep percolation of Mokelumne River water used for irrigation.

Both local and regional groundwater elevation contour maps show convergence of flow paths to the east and southeast of the WPCF. Locally important sources of recharge include deep percolation from wetland areas and ponds in the White Slough Wildlife Area, recharge from the unnamed Delta channel that extends onto the City's property, seepage from the WPCF ponds, deep percolation of irrigation water in the WPCF land application areas, and deep percolation of irrigation water in the adjacent dairy land application areas. Some of these local sources of recharge degrade groundwater quality while others may improve the quality. Because groundwater flow converges, down gradient impacts are difficult to assign to specific sources.

The Regional Board only requires monitoring wells screened at the water table. Therefore, the groundwater elevation contour maps developed from these wells are two-dimensional and cannot provide good information on the vertical movement of groundwater. Nevertheless, groundwater flow in the vicinity of the WPCF undoubtedly has significant vertical components driven by pumping and the downward movement of recharging water. Because of limited information on the vertical components of groundwater flow, the lateral extent of impacts measured at the water table is difficult to assess and assign to specific sources.

A modeling effort can be used to help define the vertical component of local groundwater. This information would be very useful in assessing water quality data from existing wells and ensuring that each monitoring well fulfills its intended purpose. Additional information regarding the downward flow in the aquifer system would also be very helpful in locating future monitoring wells.

Subtask 14.1. Perform Background Groundwater Quality Comparison

The background evaluation will be conducted consistent with CCR Title 27, Section 20415, as required in the WDRs. Descriptive statistics will be tabulated for the background and WPCF monitoring well results, and the background results will be compared to the results from each site monitoring well on a constituent by constituent basis using the Wilcoxon Rank-Sum (WRS) test. The WRS test is a nonparametric, hypothesis-testing procedure that tests for differences in central value between two independent groups of samples. Constituents exceeding background will be identified and graphed for each site monitoring well to assess concentration trends over time.

Subtask 14.2. Prepare Technical Report

The results of the background groundwater quality evaluation will be documented in a Background Groundwater Quality Characterization Report. WYA will prepare an administrative draft report for City staff review with the required text, tables and figures documenting the background evaluation and groundwater quality comparison. **A** draft report will be submitted to the Regional Board staff for review that incorporates City staff comments. Following Regional Board review and comment, a final report will be developed (if needed).

> *Deliverables: Administrative Draft Background Quality Report for City Review; Draft Background Quality Report for Regional Board staff review; and a Final Background Quality Report. The administrative draft report will be distributed in PDF formats for review. Bound copies of the revised version of the report will be distributed to the Regional Board and City staff.*

Subtask 14.3. Construct Monitoring Wells (Optional)

This optional task includes two potential well designs; and one or both of the designs could be implemented. The first design is a 50-foot-deep monitoring well assumed to be completed at the water table. The second design is a 90-foot-deep well assumed to be constructed in a deeper aquifer zone adjacent to an existing well.

The purpose of the shallower of the two wells would be to assess groundwater conditions at the water table at a location that is currently not monitored. For example, a new water table well could be constructed to further characterize background groundwater quality or potential impacts downgradient of a treatment or storage unit.

The purpose of the deeper well would be to assess groundwater conditions in a deeper aquifer zone at a location that is currently monitored. For example, monitoring in the deeper zone might be deemed necessary near existing monitoring well WSM-1 to determine whether constituents detected in WSM-1 have migrated to greater depths in the aquifer, where they could present a threat to nearby production wells.

The locations of any monitoring wells determined to be necessary will be selected in consultation with City and Regional Board staff. A monitoring well construction workplan, documenting the objectives, well location rationale, well construction materials and procedures, and implementation schedule will be prepared. The workplan will be prepared in accordance with applicable California Department of Water Resources (DWR), Regional Board and San Joaquin County Department of Environmental Health (SJDEH) requirements for well construction. For purposes of the budget presented in this proposal, the wells are assumed to be constructed as follows:

- Two-inch inside diameter PVC, with 20-foot slotted 0.02-inch screen and #2/12 filter pack inside 8-inch borings
- Traffic-rated flush mounted boxes and one well completed with an above-ground steel protective casing and four traffic bollards
- Wells will be located on City-owned land or County rights-of-way
- Well construction and development is assumed to require two days per well for a 50-foot deep well and four days per well for a 90-foot-deep well
- Twenty-four hour, seven day per week operation will be allowed by the City if required
- Soil cuttings and development water will be left at each well site or can be transported to, and left at, a City designated area of the WPCF by the drilling contractor. Thereafter, the City will be responsible for soil cuttings and development water.

County encroachment permits and drilling permits will be obtained by WYA. Coordinate surveying of the monitoring wells will be performed by the City of Lodi. After construction of the well or wells, a well completion report will be prepared in accordance with applicable DWR, Regional Board and SJDEH requirements.

Deliverables: Administrative Draft Well Construction Workplan for City review. Draft Well Construction Workplan for Regional Board review. Administrative Draft Well Completion Report for City review. Final Well Completion Report for Regional Board compliance. The administrative draft reports will be distributed in PDF formats for City review. Bound copies of the revised version of the reports will be distributed to the Regional Board and City staff.

Subtask 14.4. Groundwater Flow Modeling (Optional')

Three-dimensional groundwater flow paths will be evaluated using model simulations covering the WPCF and dairies in the vicinity of the WPCF. The model will extend to a depth of 200 feet below land surface. Recharge rates used in the model will be based on publically available land and water use information, and water balance information developed for the WPCF. Groundwater flow modeling will be conducted using MODFLOW (McDonald and Harbaugh, 1988; Harbaugh and McDonald, 1996; and Harbaugh, et. al., 2000). Particle tracking will be conducted using MODPATH (Pollock, 1989).

MODFLOW is a widely used, thoroughly tested and well documented finite difference program developed by the United States Geological Survey. MODFLOW implements an approximate finite difference solution to the groundwater flow equation and will be implemented using the Groundwater Vistas interface. MODFLOW will be used to model simulated groundwater heads and velocity vectors in plan and cross section view. This information will be used to assess groundwater flow velocities.

MODPATH is a particle tracking post-processing package that was developed to compute three-dimensional flowpaths using output from steady-state or transient ground-water flow simulations by MODFLOW. MODPATH will be used to assess flow paths and travel times from potential source areas to simulated monitoring locations.

A Groundwater Modeling Technical Memorandum (TM) summarizing the findings of the modeling effort will be developed and presented to City staff for review. After incorporating City comments, WYA will finalize the TM and redistribute it to the City

Deliverables: Draft Groundwater Modeling TM for City review. Final Groundwater Modeling TM that incorporates City comments on the draft. The draft TM will be distributed in PDF format for City review. Bound copies of the revised version of the TM will be distributed to the Cityfollowing incorporation of City comments.

Task 15. Effluent and Receiving Water Characterization

The NPDES permit requires that the City submit a Work Plan for the completion of an Effluent and Receiving Water Characterization Study (Characterization Study) within two year and six months of the adoption date of the permit (or by March 14,2010). The purpose of the Characterization Study Work Plan is to describe the monitoring program that will be completed by the City to ensure adequate data is available to develop the City's next permit. In accordance with the permit, quarterly monitoring will need to be completed between the third quarter of 2010 and the second quarter of 2011. (Note the City must file a Report of Waste Discharge by March 4,2012.)

This task involves the completion of the Characterization Study Work Plan. This task does not currently include any additional efforts needed for completion of the Characterization Study.

Deliverables: Characterization Study Work Plan.

PROJECT BUDGET

The total fee for the scope of work described above is estimated to be $392,300. **If** the City elects to implement all of the optional groundwater evaluation tasks the total fee is estimated at $496,700. A summary of the project costs by task is shown in the attached Table 1, and a detailed breakdown is also attached. WYA will perform all work on an hourly basis at standard company charge rates, and will not exceed the estimated cost without written authorization. If additional budget is required to complete work identified herein, WYA will request City authorization prior to exceeding the budget.

SCHEDULE

Work will begin upon notice to proceed from City, and is expected to be completed by August 1, 2010. A detailed schedule showing all of the permit compliance activities is also attached and will be maintained by WYA throughout the duration of this contract. WYA and our sub-consultants will provide additional services related to the studies needed under the renewed permit, subject to mutually agreeable adjustments to the scope, authorized budget, and schedule.

WYA appreciates the opportunity to provide additional permitting services to the City. Please contact me if you have any questions or need additional information.

Sincerely,

WEST YOST ASSOCIATES

Kathryn E. Gies
Principal Engineer

KEG:nmp

attachments

cc: Wally Sandelin, City of Lodi
Del Kerlin, City of Lodi

Table 1. Estimated Fee for FY 09/10 Permit Implementation Support

Task	WYA Fee, dollars	Subconsultant Fee, dollars				Total Estimated Fee, dollars
		RBI	SSD	WKA	Well Contractor	
Task 1. Project Management	4,800	5,200	—	—	—	20,000
Task 2. State Board Support	—	—	—	—	—	—
Task 3. SJVAPCD Biosolids Rule Compliance	10,700	—	—	—	—	10,700
Task 4. Regulatory Program Management	25,300	—	5,500	—	—	30,800
Task 5. Land Application Monitoring Coordination	26,200	—	—	—	—	26,200
Task 6: Compliance Studies	20,300	—	—	—	—	20,300
Task 7: Toxicity Reduction Evaluation	15,500	78,600	—	—	—	94,100
Task **8:** Title 22 Report	48,500	—	—	—	—	48,500
Task 9: Wintertime Irrigation Management Plan	—	—	—	—	—	—
Task 10: Temperature Study	3,000	34,500	—	—	—	37,500
Task 11: Industrial lnfluent Characterization Study	3,400	—	—	—	—	3,400
Task 12: Pond Freeboard Study	1,500	—	—	38,500	—	40,000
Task 13: Salinity Evaluation and Minimization Plan	4,600	—	—	—	—	4,600
Task 14: Background Groundwater Analysis	49,500	—	—	—	—	49,500
Task 15: Effluent Characterization Study	6,700	—	—	—	—	6,700
Totals	230,000	118,300	5,500	38,500	—	392,300
Optional Task 14.3a: Installation of an Additional 25-foot Well	35,900	—	—	—	4,600	40,500
Optional Task 14.3b: Installation of an Additional 50-foot Well	38,500	—	—	—	6,500	45,000
Optional Task 14.4: Groundwater Modeling	18,900	—	—	—	—	18,900
Totals With Optional Items	323,300	118,200	5,500	38,500	11,100	496,700

RESOLUTION NO. 2009-152

A RESOLUTION OF THE LODI CITY COUNCIL AUTHORIZING ADDITIONAL TASK ORDER WITH WEST YOST ASSOCIATES FOR FISCAL YEAR 2009-10 TO PROVIDE PERMIT ASSISTANCE AND PREPARE VARIOUS STUDIES REQUIRED BY THE CITY'S WASTEWATER DISCHARGE PERMIT AND FURTHER APPROPRIATING FUNDS

WHEREAS, the City's wastewater discharge permit includes requirements for a number of studies and reports to be conducted or developed on various aspects of the City's wastewater treatment operations; and

WHEREAS, on August 20, 2008, Council authorized West Yost Associates to proceed with preparing work plans for various studies and reports required by the permit; and

WHEREAS, West Yost Associates has furnished the City with a combined proposal to respond to the permit requirements for fiscal year 2009-10, including assisting City staff in regulatory program management; and

WHEREAS, the studies' monitoring efforts are required in the City's permit, and nonperformance would subject the City to significant fines; and

WHEREAS, the estimated cost for this work is $392,300, and staff suggests a contingency amount of approximately 10 percent to account for unforeseen issues for a total of $435,000.

NOW, THEREFORE, BE IT RESOLVED that the Lodi City Council does hereby authorize an additional task order in the amount of $392,300 with West Yost Associates, of Davis, California, to provide permit assistance and prepare various studies and reports required by the City's wastewater discharge permit issued by the State Central Valley Regional Water Quality Control Board; and

BE IT FURTHER RESOLVED that funds in the amount of $435,000 be appropriated from the Wastewater Capital and Operating Funds for this project.

Dated: November 4, 2009

I hereby certify that Resolution No. 2009-152 was passed and adopted by the City Council of the City of Lodi in a regular meeting held November 4, 2009, by the following vote:

AYES: COUNCIL MEMBERS – Hitchcock, Johnson, Katzakian, and Mayor Hansen

NOES: COUNCIL MEMBERS – None

ABSENT: COUNCIL MEMBERS – Mounce

ABSTAIN: COUNCIL MEMBERS – None

RANDI JOHL
City Clerk